TRANSACTIONS

OF THE

NEW YORK SURGICAL SOCIETY.

Stated Meeting, October 10, 1906.

The President, DR. GEORGE WOOLSEY, in the Chair.

STAB-WOUND OF THE KIDNEY.

DR. ALEXANDER B. JOHNSON presented a man, 39 years old, who was admitted to hospital on September 4, 1906. The history he gave was that he had just had a misunderstanding with some Italian laborers, one of whom had stabbed him in the right side of the back with the stilletto-like blade of an ordinary jack-knife.

Upon inspection, a stab-wound was found on the right side posteriorly, between the eleventh and twelfth ribs. The external wound did not bleed at all, and the patient, while he felt somewhat weak, complained of little or no pain. Thirty minutes after admission he passed, *per urethram*, three ounces of pure bright blood, which led to the diagnosis of a stab-wound involving the pelvis of the right kidney. On the following morning the kidney was exposed through a transverse incision made just below the border of the twelfth rib, disclosing a retro-peritoneal hæmatoma of considerable size. Upon separating the kidney from its surrounding connections, a stab-wound of its posterior surface near the outer border was found. This was three-quarters of an inch in length, about the same size as the external wound. There were no indications that the pleural cavity was involved. The wound of the kidney, which bled freely, was closed by a single mattress suture of catgut, and a small drain was inserted. The hæmorrhage was checked immediately, and the urine cleared up with the exception of a few blood cells. When the kidney was exposed, a good-sized instrument could be passed entirely through the organ, and into the pelvis and ureter. The subsequent history of the case was uneventful, the man making a rapid and complete recovery.

SOME CONGENITAL ANOMALIES OF THE KIDNEY AND URETER.

DR. ALEXANDER B. JOHNSON read a paper with the above title.

DR. GEORGE S. HUNTINGTON said that the subject presented by Dr. Johnson also carried a great deal of inherent interest from an anatomic point of view, and the speaker said that he had personally devoted much time to anomalies of the genito-urinary apparatus. He hardly felt able to enter into a discussion of the surgical aspects of the question, and would limit himself to a brief reference to the multiple blood supply of the kidney, especially its arterial branches, which depended on the migration of the kidney from the primary inception of the organ in the Wolffian body, which was exceedingly vascular, and upon the fact that in its course of development it could tap the mesonephron at any point. It was on this account that the superabundant and not infrequent anomalous blood supply of the kidney could be explained.

DR. GEORGE E. BREWER said that in an examination of 150 subjects he had met with six cases of double ureter; in one of these the double ureters were complete and one of them communicated with a kidney segment which was the seat of tuberculous infiltration, while the remaining kidney substance and the opposite kidney were entirely free from disease. Dr. Bransford Lewis of St. Louis recently reported a very obstinate case of gonorrhœal infection of the kidney in which, upon cystoscopic examination, he found two ureteral orifices on one side. From one he obtained perfectly normal urine, while from the other the urine was purulent. The case proved to be one of gonorrhœal pyelitis affecting one segment of the kidney only.

Dr. Brewer said that in his investigations of vascular anomalies of the kidney he was surprised at the high percentage of cases in which such anomalies existed, and he recalled one instance in which there were five distinct renal arteries. In about thirty per cent. of the cases there was a separate and distinct, although comparatively small artery, leading to the anterior surface of the kidney.

DR. GEORGE WOOLSEY said that the vascular anomalies that were not infrequently observed in the dissecting room were of interest alike to the anatomist and the surgeon. Both venous

and arterial anomalies were comparatively common. He referred to a case reported by Dr. Robert F. Weir a number of years ago, in which the life of the patient was endangered by a severe hæmorrhage from the accidental tearing of an anomalous renal vein. He also referred to a case similar to the one mentioned by Dr. Johnson, in which the patient had only a single kidney and died of uræmia after its removal.

Stated Meeting, October 24, 1906.

The President, Dr. George Woolsey, in the Chair.

SUTURE OF THE ILIOFEMORAL VEIN FOR STAB-WOUND.

Dr. Charles H. Peck presented a man, 21 years old, who was stabbed in the left groin with a large bread knife during a street altercation early in the morning of September 5, 1906. He was carried into a saloon, where the ambulance surgeon found him lying in a pool of blood and almost exsanguinated. Pad pressure was applied to the wound and he was hurried to the hospital. A saline infusion was given, during the course of which active venous bleeding recurred, which required continuous digital pressure over tight gauze packing in order to control it.

When the patient was taken to the operating room and anæsthetized, it was found that the stab-wound had severed Poupart's ligament over the line of the great vein. The wound was enlarged obliquely upward and outward, and vertically downward. The femoral vein was exposed below the wound, and a temporary ligature placed around it. The peritoneum of the iliac fossa was pushed upward until the external iliac vein was exposed above, and a similar ligature was passed around it. The deep circumflex iliac and deep epigastric veins were then ligated to control the hæmorrhage, which the temporary ligatures on the great vein had failed to check. Inspection showed that the wound in the vein was from one-half to two-thirds of an inch in length; it involved the anterior wall only, and was exactly in its longitudinal axis. It was directly beneath Poupart's ligament, chiefly in the terminal portion of the external iliac vein. The open mouths of the deep epigastric and

deep circumflex iliac could be seen through the wound. Digital pressure directly over the wound in the vein was maintained by the House Surgeon, Dr. Coerr, until the temporary ligatures on the main vein were in place, and the tributaries tied off.

The wound in the vein was then closed with a through-and-through continuous suture of No. 00 chromic gut, which checked the hæmorrhage completely. This was reinforced by another layer through sheath and overlying tissues, and the temporary ligatures were removed. Poupart's ligament and the deep muscles were sutured with chromic gut. The wound was then closed with catgut and silk, excepting at the lower angle, where a cigarette drain was placed. A long posterior splint was applied, and the limb elevated. The pulse was scarcely perceptible at one stage of the operation, and an infusion containing adrenalin was given on the table. Time of operation, fifty-six minutes. The patient rallied promptly from the shock, and there was no further hæmorrhage, and no venous congestion nor coldness or œdema of the limb at any time. The patient's temperature ranged below 100.4°, and his pulse between 80 and 90 for the first three days after the operation, and after that never rose above 99.8, excepting once, on the twelfth day, when it reached 100. The dressings were changed on the third day, when the wound appeared clean, and the drain was removed. At the next dressing, on the seventh day, rather extensive suppuration in the subcutaneous fat was discovered. This delayed the healing of the wound, but did not involve the deeper structures nor interfere with the healing of the wound in the vein. It was undoubtedly due to contamination of the original stab-wound, which it had been impossible to cleanse properly on account of the free bleeding. The limb was kept immobilized on a long splint for about two weeks. The patient was allowed out of bed on the twenty-fourth day, and left the hospital thirty days after the injury. The wound was practically healed, with the exception of a small granulating area.

PARTIAL GASTRECTOMY FOR CARCINOMA.

Dr. Chas. H. Peck presented a man, 66 years old, who was referred to him by Dr. Walter A. Bastedo, and was operated on at Roosevelt Hospital on July 13, 1906. He gave a history of stomach trouble dating back more than five years, with gradu-

ally increasing loss of flesh and strength, and vomiting, especially for the past two or three years. A mass could be felt in the region of the pylorus, and stomach peristalsis was visible through the skin.

Under ether anæsthesia, a vertical incision, five inches long, was made three-quarters of an inch to the right of the median line. About one-third of the stomach was occupied by an indurated mass, the center of which was on the anterior wall, two or three inches to the left of the pylorus. The lumen of the stomach was much constricted at this point, scarcely admitting the little finger through the rigid walled orifice. The pylorus itself was not involved. The stomach to the left of the obstruction was dilated, and its muscular coat much hypertrophied. The mass was not adherent to the surrounding structures, but the glands at both curvatures were enlarged. The first portion of the duodenum was divided with the thermo-cautery between clamps, about one inch below the pylorus. The cut end of the distal portion was closed with a continuous suture of heavy catgut, through all its coats, before removing the clamp, and then inverted with a purse-string suture of heavy silk. The lesser omentum was ligated in segments, and divided near the liver; the gastric artery was ligated near the cardiac end of the stomach. The stomach was then turned to the left, and the greater omentum ligated in segments below the line of the glands, as far as the middle of the greater curvature. The gastro-epiploica sinistra was then ligated, and the stomach divided between two long clamps, the excised portion including all of the lesser and about one-half of the greater curvature. The cut end of the stomach was closed with a heavy catgut lock-stitch suture before removal of the clamp. This was buried by a continuous catgut Lembert suture, and a third tier, of heavy silk, was placed in the same manner. A posterior gastroenterostomy was then performed with a Murphy button, Weir-flange, protected by interrupted silk Lembert stitches. The anastomosis was made in the first three inches of the jejunum. The edges of the slit in the transverse mesocolon were attached to the stomach by a few catgut stitches. A cigarette drain was inserted to the stump of the duodenum, and the abdominal wall closed by layers with catgut, chromic gut, silk-worm gut and silk. Time of operation, one hour and a quarter. The patient rallied nicely

from shock. A low rectal saline irrigation was given every six hours. Small quantities of sterile water were given by the mouth after twelve hours, and peptonized milk on the third day. There was no vomiting after the operation, and scarcely any nausea. The temperature barely reached 100° after the second day, and the pulse-rate was slightly above the normal. The patient's convalescence was uneventful. The button was never recovered in the stools, but as an X-ray picture taken before he left the hospital was negative, and he has had no symptoms suggesting its retention, its passage was undoubtedly overlooked. He was allowed out of bed on the twelfth day, and left the hospital eight days later. He was then eating a variety of solid food without discomfort. He has had no nausea or vomiting since the operation, and no distress after eating. He has gained about 30 pounds in weight since the operation.

The pathological report of the specimen was carcinoma, probably developing on the base of an old ulcer.

DR. WILLY MEYER, in speaking of the methods of securing the cut end of the duodenum in cases where the carcinoma involves the greater part of the superior horizontal portion of the same, referred to the following procedure, which he had applied in three of his cases, with excellent results: After the division and closure of the duodenum by the usual method, he considered it very wise, as an additional precaution, to stitch the head of the pancreas over it by a few interrupted sutures. If an omental flap can be drawn on top, one is still more secured against leakage from the stump. Under such conditions the insertion of a cigarette drain is superfluous. He has always closed the abdomen in his cases without drainage.

Dr. Meyer did not find his method mentioned in the extended discussion which recently appeared in the *Centralblatt für Chirurgie* on this subject or elsewhere in literature and therefore thought it worth while to mention it here.

DR. FRED. KAMMERER said he had followed this method of re-enforcing the sutured end of the duodenum mentioned by Dr. Meyer in two cases, quite a number of years ago. Both cases had done well and leakage from the duodenum was prevented. No doubt this method had suggested itself to other surgeons also.

PERICARDITIS TREATED BY DRAINAGE.

DR. OTTO G. T. KILIANI presented a man of 22 who was admitted to the German Hospital in 1901 for an attack of acute articular rheumatism, complicated by endo- and pericarditis. There was a large pericardial effusion which at one time became so threatening that it required immediate incision of the pericardium. Drainage of the pericardial sac was continued for seven days, after which the oozing ceased. Immediately upon incision, the patient, who had been practically moribund, showed signs of improvement, and his further recovery was uneventful. He had remained well up to the present time, a period of about five years.

BALL-VALVE TUMOR OF THE STOMACH.

DR. CHARLES L. GIBSON presented a man of 62, who was operated on at St. Luke's Hospital three weeks ago for the relief of gastric symptoms of some years duration, and consisting chiefly of a progressive loss of flesh and strength. An examination of the stomach contents, as well as the objective signs, led to a probable diagnosis of carcinoma.

Upon opening the stomach, a tumor as large as a good-sized cherry was found. It was attached to a pedicle about an inch and a half long, which sprang from just inside the pylorus. This tumor had apparently intermittently plugged the pylorus, thus giving rise to pyloric obstruction. The patient made a rapid recovery, and had since remained absolutely free from symptoms. The pathologist reported that the mass was polypoid in character.

DR. JOSEPH A. BLAKE said that in a somewhat similar case upon which he operated about four years ago, the tumor proved to be an adenoma. It was pedunculated, and at times caused symptoms of obstruction by being swept into the pyloric orifice. The speaker thought that most of these polypoid growths of the stomach were adenomatous in character.

SARCOMA OF FEMUR TREATED BY MIXED TOXINS.

DR. W. B. COLEY showed the following cases of sarcoma of the femur treated with the mixed toxins of erysipelas and bacillus prodigiosus:

CASE I.—E. R. F., 16 years old. *Giant-celled Sarcoma of*

the Lower End of the Femur, of central origin and rapid growth. The patient was admitted to Dr. Gibney's service at the Hospital for Ruptured and Crippled, on April 2, 1906, with a history that three months before she had first noticed pain on the inside of the left knee on walking. One month later she began to have slight tenderness in this region and a hard swelling appeared. This rapidly increased in size and very soon lameness developed. At the time of admission to the hospital, April 2, 1906, the patient's general condition was good and she was able to walk without apparatus, but had a decided limp. Just above the internal condyle of the left femur there was considerable enlargement, apparently of bony origin. The tumor did not connect with the cavity of the joint, but over the central portion deep palpation elicited a sense of fluctuation. The skin over the swelling was normal. Measurements of the thigh showed 1 inch atrophy of the affected side and 1 ¼ in. increase in size over the swelling just above the left knee.

The diagnosis in this case was difficult, and was settled by an exploratory operation by Drs. Gibney and Coley, on April 6, 1906. A 2 ½ in. incision over the swelling on the inside of the thigh showed a fluctuating tumor which, on aspiration, was found to contain bloody serum. An incision was made into the tumor, and a considerable quantity of blood and serum evacuated. The cavity itself was the size of a small egg and occupied the central portion of the femur. The tumor was exceedingly vascular and hæmorrhage was stopped by gauze packing. The blood count was practically normal.

The specimen was examined by Dr. Jeffries, pathologist of the hospital, who pronounced it giant-celled sarcoma. It was thought worth while to try the mixed toxins for a few weeks in the hope of saving the limb from amputation. The toxins were begun on April 9, and continued for about a month in doses sufficient to cause a moderate reaction.

At first there was decided improvement in the leg, as shown by a decrease of nearly 1 inch in size. Very soon thereafter, however, the toxins apparently lost their effect and the tumor began to rapidly increase in size. After consultation by Drs. Gibney, Bull and Coley, it was decided to amputate below the trochanter rather than at the hip joint. This was done on May 18, by Dr. Coley, 4 inches below the trochanter. The patient,

though suffering a good deal of shock, made a good recovery, the wound healing by primary union. The toxins were resumed as a prophylactic, on June 9, since which time she has had 32 injections into the other thigh and into the stump of the amputated leg.

Her weight on June 12, just after the beginning of the toxins, after amputation, was 77¾ pounds. She increased from ¼ to 2 pounds a week steadily and at the present time, October 24, weighs 91¾ lbs. The patient is in perfect health and there is no evidence of a return either in the stump or any other portion of the body.

CASE II.—S. D., female, 18 years old. *Mixed-celled Sarcoma of the Lower End of the Right Femur*, of central origin. No trauma. The patient was admitted to Dr. Gibney's service at the Hospital for Ruptured and Crippled on March 29, 1906, with the following history: One year ago she first noticed pain in the right knee, which was first treated for rheumatism. The pain continued until August, 1905, when a plaster of Paris splint was applied at St. Luke's Hospital, the condition being at that time regarded as of tuberculous origin. The treatment was continued for about seven months, the splint having been removed six weeks before she entered the Hospital for Ruptured and Crippled. The last two months she had been confined to bed and was very much emaciated and extremely weak. The right knee presented a fusiform swelling just above the joint. Measurements (just above the joint) showed a circumference of 15 ins. on the right side, 11¼ on the left. The knee itself was acutely tender and any motion painful. X-ray photograph showed the lower 6 inches of the femur nearly twice the normal thickness. The clinical condition seemed clearly tubercular osteitis and Dr. Gibney decided to excise the joint. A semilunar incision was made through the ligamentous patella. The joint when exposed was found in perfectly healthy condition, while the femur above the joint was much thickened and presented three softened, purplish areas. These softened areas were curetted and a large quantity of disorganized cheesy material removed. The lower end of the femur was almost entirely disorganized, shaft and condyles being connected only by three narrow bridges of bone. The material removed closely resembled that of tubercular tissue, but the microscopical report stated

it to be mixed-celled sarcoma. The blood count showed: Red cells, 3,360,000; hæmoglobin, 85 per cent.

After the diagnosis of sarcoma had been established, the patient was referred to Dr. Coley by Dr. Gibney for amputation. This was done 4 inches below the trochanter, on April 7, 1906. The patient suffered little shock and made an uninterrupted recovery, the wound healing by primary union. She was put upon the mixed toxins on April 26 and the injections were given every other day. The patient showed a very rapid increase in weight, rising from 69 pounds on June 12 to 92 pounds on October 24. In August both patients were sent to the country for two weeks during which time the toxins were remitted. Both patients will leave the hospital to-morrow and the toxins will be discontinued for a few weeks at least.

These cases, of course, are entirely too recent to be claimed as permanent results and they were shown by Dr. Coley for the purpose of illustrating his recent change of view as to the proper method of treating sarcoma of the femur. Up to two or three years ago he strongly believed in amputation at the hip joint for this condition. In six of eight hip-joint amputations which he performed for sarcoma without mortality, the patients showed no permanent recovery. Five had a recurrence within six months of the operation and the sixth case could not be traced.

Of 68 cases collected from the literature by Butlin, in which hip-joint or high amputation was done for sarcoma of the femur, only one patient is known to have remained well over three years.

Dr. Coley stated that he had been able to find seven cases of sarcoma of the femur in this country in which the patient has lived beyond three years. In three of these seven cases success was undoubtedly due to the mixed toxins of erysipelas and bacillus prodigiosus. In a fourth case, an osteosarcoma of the femur, in which hip-joint or high amputation was done by Dr. Bull at the New York Hospital, 16 years ago, a very severe streptococcic infection of the stump followed the amputation. The patient recovered, and was well when last heard from, sixteen years later. In this case there is reason to believe that the infection had much to do with preventing a recurrence. In one case the sarcoma was situated in the upper portion of the femur, causing spontaneous fracture. The disease was so far advanced that, in the opinion of Dr. Gerster of Mt. Sinai Hospital,

there was no hope from hip-joint amputation and the patient was sent to the Montefiore Home for Incurables. He received prolonged treatment with the mixed toxins with the result that the tumor entirely disappeared and the bone re-united. The patient was in perfect health more than four years after treatment. In this case the microscopical examination, made by Dr. Mandlebaum, pathologist of the Mt. Sinai Hospital, and confirmed by Prof. J. N. Prudden of Columbia University, showed the growth to be giant-celled sarcoma.

CASE III.—Dr. Coley then showed a case of extensive *round-celled sarcoma of the left femur*, in which he had strongly advised hip-joint amputation in February, 1902, but neither the patient nor his family would consent to the sacrifice of the limb. The patient was then put upon the X-ray treatment from February until December, and while there was unmistakeable decrease in the size of the tumor of the femur, extensive metastases developed in the pectoral and lumbar regions in December 1902. A highly vascular mass developed under the left pectoral muscle, the size of a hand, which was partially removed by operation. The tumor in the lumbar region extended from the anterior superior spine up to the ribs, apparently of about the size of a child's head. The patient was then put upon the mixed toxins of erysipelas and the treatment was continued with intervals of rest, for the greater part of the next year. In a few weeks the lumbar tumor softened and became necrotic. An opening was made posteriorly and large masses of tumor material were drained away. At the present time there is no evidence of any sarcoma either in the lumbar or pectoral region and subsequent curettings have shown no sarcomatous elements in the femur. There still remains a chronic thickening of the femur, which has not, however, increased in nearly four years. The patient's general health is good.

The results in these six patients, together with those previously referred to, have led Dr. Coley to believe that the most rational treatment of sarcoma of the femur at the present time, when situated in the usual locality, namely, the lower end, is a brief preliminary trial with the toxins. If no marked improvement is evident at the end of a month, amputation below the trochanter should then be done, leaving sufficient stump to enable the patient to comfortably wear a false leg; followed by

prolonged use of the toxins immediately after wound healing, in the hope of preventing a recurrence.

Dr. Coley finally showed a fourth patient, with inoperable *round-celled sarcoma of the spine*, well nearly five years after treatment with the toxins.

CASE IV.—D. G., male, 20 years old. Diagnosis confirmed by Dr. H. Brooks, pathologist of the Bellevue Hospital. The tumor was of enormous size, involving the lower dorsal and upper lumbar vertebræ. The patient had lost about fifty pounds in weight, and there was so much pressure upon the spinal cord that there was total paralysis of the lower extremities, bladder and rectum, and he was so weak that he was unable to turn over in bed. Seen in consultation with Dr. V. P. Gibney, of the Montefiore Home, in February, 1902. The mixed toxins of erysipelas and bacillus prodigiosus were begun and continued by the house staff under Dr. Coley's direction; daily injections were given up to the following May, and severe reactions, temperature of 103° to 104°, followed most of the injections. Patient began to show improvement, local as well as general, almost at once. By September he was able to get out on crutches. In November he was shown before the New York Surgical Society by Dr. John Rogers. At that time he had regained nearly his normal weight and got about very well with the aid of a cane. In February, 1903, one year after treatment, he was able to walk perfectly well without support of any kind, and his general health had become perfect. He was able to resume his former occupation.

Dr. Coley stated that he considered this to be the most remarkable result ever obtained from the use of the toxins. Fortunately, there can be no doubt as to the diagnosis, since the tumor was not only examined by well-known pathologists,but specimens of the tumor have been preserved. He has shown this patient before various medical societies the past two years. The patient remains in perfect health, nearly five years after treatment.

DR. JOHN ROGERS said that one of the patients shown by Dr. Coley, the young man with the tumor on the back, had been under his care for several months. The growth was a massive one, involving the region now occupied by the scar, and showed every clinical evidence of sarcoma. The disappearance of the growth under the use of the mixed toxins was certainly very

remarkable. The speaker asked Dr. Coley what percentage of recoveries in sarcoma he had met with by the use of the mixed toxins.

DR. COLEY said that he could not answer Dr. Roger's question accurately without referring to his records. Furthermore, it would depend somewhat on the type of sarcoma. Originally, he was inclined to believe that the best results from the use of the toxins were observed in sarcoma of the spindle-celled variety, and very poor in the round-celled type. In recent years, however, he had been obliged to change his opinion in that respect, as many cases of round-celled sarcoma had been successfully treated by the toxins. Speaking offhand, he could positively say that he had observed from ten to fifteen per cent. of permanent cures following the use of the toxins, and in that connection, the fact should not be lost sight of that he only recommended the treatment in hopeless cases that were inoperable, with this one exception, namely, in sarcoma of the extremities, where an amputation of the limb would otherwise be imperative. In such cases he believed it justifiable to try the toxins for three or four weeks before sacrificing the limb. Up to the present time Dr Coley had collected 12 cases (four personal and eight cases of other men) in which the arm or leg had been saved and eight of these patients were alive and well more than three years afterwards.

DR. ALEXANDER B. JOHNSON said he had under his observation a woman, about 35 years old, who had suffered from recurrent sarcomatous growths in various regions of the body. According to her history, her first sarcoma appeared when she was about a year old, and since that time she had submitted to at least fifteen operations for the removal of these growths. Personally, Dr Johnson said, he had operated on her four times, and he knew of several other surgeons who had operated on her three, four or five times. The regions involved have been the breast, the lumbar and gluteal regions, the groin, etc. At the present time she had a sarcomatous mass in the abdomen, which he had found it impossible to thoroughly remove in spite of a very far-reaching dissection. He asked Dr Coley whether, in his opinion, the mixed toxins were indicated in such a case.

DR. COLEY replied that under ordinary circumstances the use of the toxins would not be indicated under such conditions.

Still, he recalled cases equally hopeless, apparently, which had recovered under their use. The treatment required a thorough trial in order to prove or disprove its efficacy. In some cases it effected a marvelous recovery, while in others it was useless. In those cases where improvement occurred, it was apparently due to the systemic effect of the toxins, and not to their local action. In a case of extensive cancerous involvement of the mesentery which was referred to him by Dr. Willy Meyer about twelve years ago, the patient had recovered entirely under the use of the toxins. He had since remained well, and had recently married. In the spinal case he had shown, the patient had received no treatment since 1902.

EPIDURAL HÆMORRHAGE.

DR. ALEXANDER B. JOHNSON presented a boy, 19 years old, a native of Austria, and a tailor by occupation.

His past history was that he had suffered from occasional frontal headaches, which sometimes incapacitated him for work for half a day at a time. It was alleged by his friends that his mouth had always been drawn to the right, and that the left cheek was flattened, even when at rest. There was no history of epilepsy nor of venereal disease. The boy's habits were good.

On the morning of September 27, 1906, at 10 o'clock, he was knocked to the ground from a low wagon. He was able, unassisted, he said, to reach his home, a few blocks away, and walked up two flights of stairs. He at once complained of headache, and laid down. An hour later he vomited some food and a little blood, at the same time losing consciousness, and remaining in that state until six P. M. He vomited every time he turned his head, but there was no further vomiting of blood. There was no bleeding from the mouth, throat or ears. At six P. M. he recovered consciousness, and remained conscious for four hours, during which interval he vomited several times. An ice-bag applied to the head gave no relief to the headache. Leeches applied behind both ears made him feel weaker, but relieved the headache slightly. At this time he said he could not hear from the right ear. At ten P. M. he again became unconscious and continued to vomit on moving his head.

The following morning he was stuporous, but could be aroused; he would obey directions and even respond to ques-

tions at times. He still complained of headache, which was general in character, but most severe above the right mastoid region. He said it hurt him to see with the right eye and that there was still loss of hearing on the right side. He complained of no pain, save that in the head. The vomiting persisted. His friends state that his mouth was drawn to the right, but no more so than before the accident; that he was able to frown on both sides, to close both eyes tightly, and to move all his extremities. He had occasional slight twitchings, general in character.

The patient was brought to the New York Hospital in a carriage at 10.30 A. M. on September 28. Upon admission, he was stuporous, and could be roused with difficulty sufficiently to do simple things, such as opening the eyes or protrude the tongue, or briefly reply to questions. His eyes were closed; his expression apathetic, when not disturbed, yet he was very irritable, resenting any examination by turning about. The head showed no evidence of any injury. There was tenderness to percussion in the posterior temporal and mastoid regions on the right side; no change in the percussion note. The mouth was drawn to the right side; the left side of the mouth and left cheek were flaccid; the tongue was slightly coated and deviated a trifle to the left. No bleeding from the mouth, nose or ears. The forehead, in frowning, wrinkled only on the right side. Both eyes could be tightly closed, the right more so than the left. The right pupil was somewhat dilated, and failed to react to light. The opposite pupil reacted normally. There was no subconjunctival ecchymosis. On account of the patient's condition, it was impossible to test his sight.

Heart normal; pulse, 64, regular, slight increase in tension. Lungs and abdominal organs negative. The patient at times moved the extremities, and the right hand was occasionally carried behind the right ear, especially after pressure over that region. During most of the time the extremities were limp, dropping when raised. There were no evidences of paralysis. No loss of pain sensation. Fibrillary twitchings over the entire body at times, most marked over the left pectoral muscles and the left cheek. All the reflexes were present; the supraorbital was much more marked on the right side.

At two P. M. on the day of admission, the patient was very stuporous and could not be roused in the slightest degree.

Temperature, 99°; pulse, 64; respirations, 18. An immediate operation was deemed advisable, and was performed by Dr, Johnson at 3.30 P. M.

Operation.—An inverted U-shaped incision was made over the posterior part of the right temporal region. The scalp showed some ecchymosis. Four quarter-inch holes were then drilled into the skull, one at each corner of the exposed square. The bone flap was then completed with Hartley's skull saw, and the osteotome and hammer. Immediately on turning back the flap, which was about two and a half inches square, a large, dark blood clot came to view, which was easily removed by the fingers and irrigation. It covered an area half as big as an adult palm, and extended for some distance beyond the bounderies of the bone flap. A sharp spicule of bone along the anterior edge of the flap was removed by the rongeur forceps. The brain was markedly compressed by the clot, and did not pulsate. There was some arterial bleeding from a point in the dura near the lower part of the exposed area (posterior branch of the middle meningeal) which was controlled by a suture of fine catgut, and there was considerable steady oozing from above and in front of the exposed area, the source of which could not be determined, and which continued after temporary packing with gauze. Before the completion of the operation, the depressed brain had expanded and begun to pulsate. As the oozing from above still continued, a plain gauze drain was packed in between the dura and the skull, and led out at the upper, anterior angle of the bone flap, a piece of bone being removed from that corner of the flap by rongeur forceps to make an opening for it. The osteoplastic flap and the muscles were then carefully replaced, and the edges of the scalp united by sutures of silk.

Shortly after the commencement of anæsthesia, the patient's pulse and respirations became very slow, the former falling to 40 per minute, and the respirations to ten. With the opening of the skull, however, the pulse became more frequent, and almost normal; then, for a brief period, the pulse became weak and irregular, but its quality soon improved without stimulation, and the patient left the table in good condition. At 8.30 P. M., on the day of the operation, the patient was conscious. He was able to answer questions intelligently, and said that his

headache was much relieved. The tongue did not deviate. On the following day he was much improved, and the sight of the right eye was apparently good. There was no paralysis, excepting of the face. There was no loss of sensation; reflexes marked. On the third day, when the dressings were changed, the patient said he could hear perfectly well on the right side. His further convalescence was uninterrupted, and he left the hospital, entirely well, on October 15.

BILATERAL ANKYLOSIS OF TEMPORO-MAXILLARY JOINT.

DR. JOHN A. HARTWELL presented a girl of 17, who had an attack of diphtheria when five years old, and at that time it was first noticed that upon attempts to examine her throat, she was unable to open her mouth widely. The parents state that when she was three years old she fell and struck her chin, receiving a cut lip. It was not known that she received any injury to the jaw itself or whether this had any bearing upon the subsequent ankylosis of the jaw.

When the patient came under Dr. Hartwell's observation, last April, there was almost complete immobilization of the lower jaw. When she was asked to open her jaws to the extreme limit, the distance between the upper and lower incisors measured three-eighths of an inch, and she was unable to protrude the lower jaw beyond the upper one. An X-ray picture which was taken failed to show the cause of the obstruction, which was supposed to be due to an ankylosis of the temporo-maxillary joint.

Upon making an incision, Dr. Hartwell said he came down upon a bony mass which was firmly adherent to the zygoma above, and to the outer surface of the ramus below. Its attachment to the ramus was very firm, while to the zygoma it was attached by a band of fibrous tissue. With the chisel and rongeur the attachments were freed, first on one side and then on the other, until the articulation became perfectly normal. The operation was done about two months ago, and the patient was now able to open her jaws to the full extent.

Dr. Hartwell said he could give no cause for the bilateral ankylosis in this case. It was apparently not congenital, and so far as he knew, was unique.

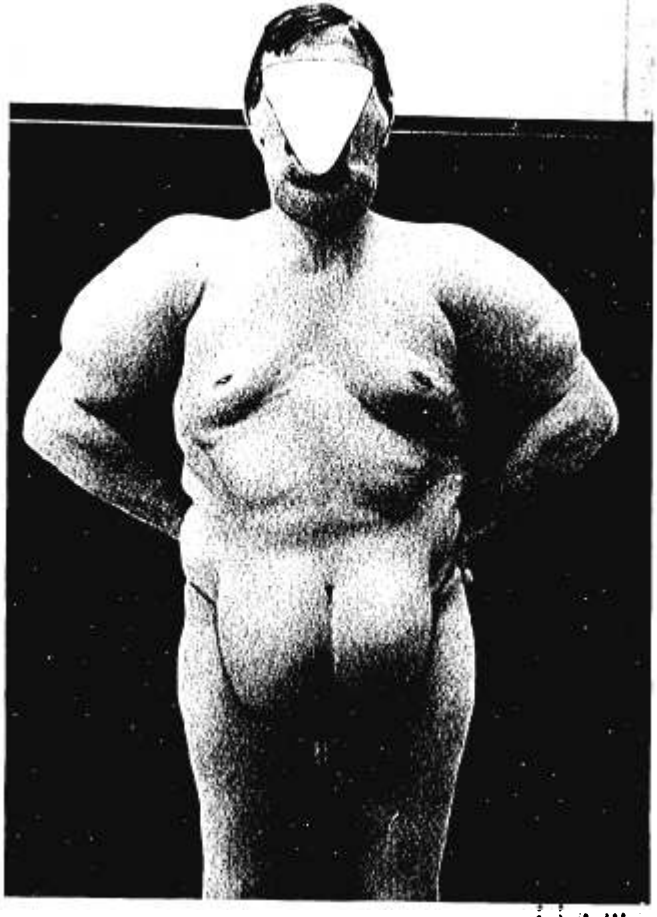

FIG. 1.—Multiple symmetrical lipoma.

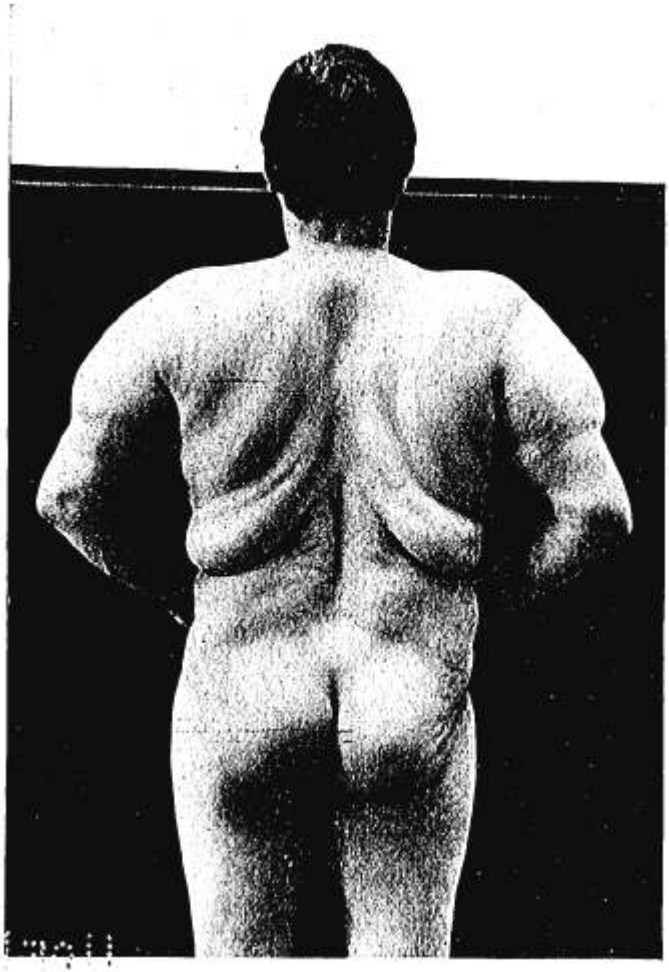

FIG. 2.—Multiple symmetrical lipoma.

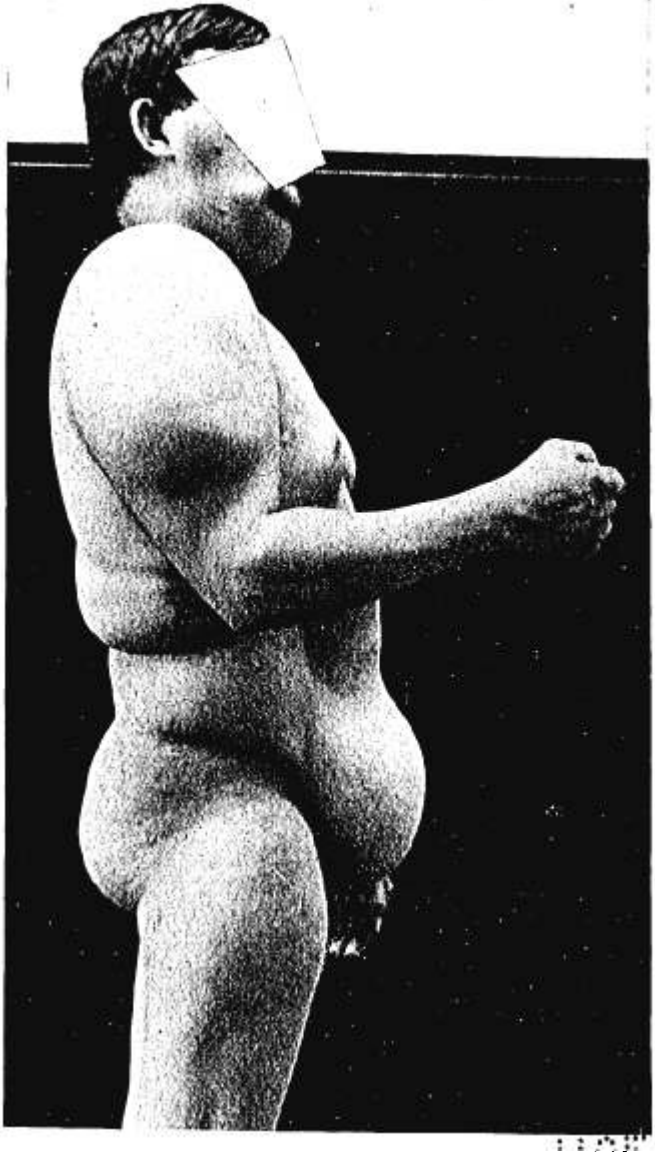

FIG. 3.—Multiple symmetrical lipoma.

TYPHOID, WITH DOUBLE PERFORATION OF THE ILEUM AND PERFORATION OF THE GALL-BLADDER; INTESTINAL SUTURES; CHOLECYSTECTOMY. DEATH TWENTY-ONE DAYS AFTER OPERATION; AUTOPSY.

DR. OTTO G. T. KILIANI read a paper with the above title, for which see page 34.

DR. WOOLSEY said that it was extremely doubtful whether the diagnosis of perforation of the gall-bladder could have been made under the conditions indicated without opening the abdomen. He could recall a number of cases of cholecystitis developing in the course of typhoid fever, but they were all of a comparatively mild character, and the symptoms gradually subsided. In such cases, a recurrence, with stone formation, was not infrequent. Dr. Kiliani's case was certainly both unique and interesting.

DR. KAMMERER mentioned a case in which septic temperature developed after typhoid fever had run its course. A swelling in the region of the gall-bladder finally indicated the seat of trouble and upon opening the abdomen an acutely distended gall-bladder was found. Incision of the same revealed several gall-stones and some seropurulent fluid, from which typhoid bacilli were easily cultivated. The gall-bladder was otherwise normal, and the case healed under drainage and the patient finally recovered after a very long illness.

MULTIPLE SYMMETRICAL LIPOMA.

DR. KILIANI showed a number of photographs of this case. (See Figs. 1, 2 and 3.) The patient was a man, 49 years old. His family history was good. He was markedly alcoholic; denied venereal disease. Four or five years ago he first noticed the appearance of these symmetrical lipomatous swellings, which gradually involved the face, shoulders, abdomen, thighs, etc. Dr. Kiliani said that at the request of the patient he had extirpated two of these swellings in front of the ears, on account of the disfiguration they had given rise to.

DR. KAMMERER referred to two cases of symmetrical lipoma, which he had observed almost ten years ago and in which a marked diminution in the size of the tumors followed the use of thyroid extract.

DR. WOOLSEY said he saw a case during the past year in which the lipomatous masses occupied the axillæ and both sides of the neck and were somewhat painful. The growths in this case were in a woman who was operated on for gall-bladder disease.

DR. KILIANI, in closing the discussion, said the type of cases of which he had shown photographs was entirely different from that in which the tumors apparently followed the course of certain nerves.

Stated Meeting, November 14, 1906.

The President, DR. GEORGE WOOLSEY in the Chair.

SUBCUTANEOUS RUPTURE OF POPLITEAL ARTERY AND VEIN.

DR. BENJAMIN T. TILTON presented a boy 17 years old, who on June 27, 1906, was seated on the rear end of a large truck, with his legs hanging over the end. The truck was on the car-track and started to leave it in order to allow a car that was following to pass by. The motorman of the car did not allow the driver sufficient time to get off the track, and collided with the rear end of the truck, the car striking the boy a blow on the flexed knee, and forcing the back of the knee against the tail-board of the truck. The boy complained of great pain in the popliteal space, and was unable to walk. He was brought to Bellevue Hospital by ambulance.

Upon admission, the physical examination showed a slight abrasion on the front and outer side of the knee below the patella. The knee was held in a slightly flexed position. There was a fulness in the popliteal space. There was no ecchymosis, and the knee-joint contained no blood. There was no tenderness in front, but posteriorly there was marked tenderness in the popliteal space. Extension of the knee was impossible on account of the pain. There were evidences of loss of circulation in the foot and leg.

On the following day the swelling in the popliteal space had increased, extending further up and down the leg. There was a slight yellow discoloration in the calf. Absence of pulsation in the leg and foot persisted. On the following day an

operation was undertaken to relieve the pressure of the increasing hæmatoma which was causing the patient great pain, and to determine the condition of the popliteal vessels.

An Esmarch bandage was applied, and an incision made in the popliteal space. A fair amount of clotted blood was evacuated, and it was found upon inspection that both the artery and vein were completely severed, the two ends of each being separated fully an inch. There were thrombi in the proximal ends. As consent for amputation had not been obtained the artery and vein were ligated proximally and distally, and the wound partially sutured. It was noted that the amount of hæmatoma seemed small in relation to the size of the vessels which had been completely ruptured.

The pain in the leg continued, and signs of beginning gangrene of the moist variety showed themselves. The temperature rose gradually to 105°, and there was evidently no chance of saving any part of the leg, which had now become infected, On account of the threatening sepsis, a Gritti amputation was performed on July 10, thirteen days after the injury. There was not sufficient healthy skin tissue behind to permit of approximation with the anterior flap; consequently, the wound was left open, posteriorly, and packed. No infection occurred, in spite of the close proximity of the amputation to the gangrenous areas. The sawn surface of the patella united promptly with that of the femur.

The granulating surface behind was finally covered by skin grafts a few weeks after the amputation, and a good stump resulted. The case was interesting, Dr. Tilton said, First, on account of the rarity of this particular injury; Secondly, because of the question of the mechanism that produced it; Thirdly, because of the very slight accompanying injury of the skin and soft parts; and, Fourthly, the question of possible suture of the divided artery and vein.

Dr. L. W. Hotchkiss said that he had had one case similar to the one presented by Dr. Tilton. The patient's leg was caught between the buffers of two cars. There was a comminuted fracture of the lower end of the femur, slightly compounded, which was treated in the usual way, as the full extent of the injury was not at first recognized. Rapidly developing gangrene of the foot led to an incision over the popliteal space,

which revealed a complete rupture of the artery, the two ends of the vessel being widely separated. Amputation of the leg was followed by recovery. In this case he thought the question of arterio-venous anastomosis was out of the question.

DR. FRANK W. MURRAY said that some years ago, at the old Chambers' Street Hospital, he saw a sailor who had met with a similar accident while paying out rope on a tugboat. His leg was caught in a coil of the rope, and he received a very severe wrench in the region of the knee. When he was brought to the hospital there were no signs of a fracture; there was some laceration of the skin, and a slight hæmatoma in the popliteal region, with exquisite pain, and entire absence of pulsation in the anterior and posterior tibials. On the following day the condition being practically unchanged, the popliteal space was explored, and a complete rupture of the popliteal artery and vein was found, and though the ends of the severed artery were curled up, the condition of the ends of the severed vessels, together with the laceration of the surrounding tissues did not allow of any attempt at an end-to-end suture, so amputation at the knee was performed.

DR. HOWARD LILIENTHAL, in reply to a question as to whether a suture of the vessels would have been feasible in a case like the one reported by Dr. Tilton, said he had had no personal experience with injuries of that character. If suture of the vessels was resorted to in such a case, it would have to be done after the manner demonstrated by Carrel, which he would subsequently describe in his paper.

RESECTION OF THE ANKLE FOR TUBERCULOSIS.

DR. WALTON MARTIN presented a girl, ten years old, who was admitted to the Roosevelt Hospital January 19, 1906, in the service of Dr. Blake.

For the past two years she had been suffering from tuberculosis of the right ankle. The ankle was much swollen; she was unable to walk on account of the pain, and there was a discharging sinus near the inner malleolus. The X-ray showed a focus of diseased bone in the lower end of the tibia, near the epiphyseal cartilage.

Conservative treatment was carried out for three months. The sinus was curetted, the joint immobilized, and the child

was kept for the greater part of the day in the fresh air. During this period, Dr. Norman E. Ditman treated the child with injections of tuberculin. The tuberculo-opsonic index was .5 on February 17; on April 6 the index was 1.5. Notwithstanding, the joint, after a period of temporary improvement, became worse. The pain increased, and the swelling extended to the region of the external malleolus.

On May 4, 1906, the joint was resected. The ends of the tibia and fibula were sawn across, and the astragalus removed. The diseased capsule was dissected out, the old sinus curetted and drainage tubes were introduced in the lateral incisions. The temperature reached normal twenty-one days after the operation. The old sinus and the drainage openings closed gradually, and the child was discharged from the hospital cured early in July. She passed the following two months at Sea Breeze, Coney Island. At present she is in good health, has a movable ankle and can walk without pain or discomfort.

Dr. Hotchkiss said he saw the patient in the Hospital early last summer, and again after her return from Sea Breeze, and had been struck by the remarkable improvement in her condition.

Dr. Joseph A. Blake, who had also seen the patient, said. that for a time her condition was regarded as very precarious. The improvement in her appearance, to which Dr. Hotchkiss had referred, was so marked that one would scarcely recognize her as the same person.

SMALL ROUND-CELLED SARCOMA OF THE NECK AND TONSIL; ENTIRE DISAPPEARANCE IN SEVEN WEEKS UNDER TREATMENT WITH THE MIXED TOXINS OF ERYSIPELAS AND BACILLUS PRODIGIOSUS.

Dr. William B. Coley presented a man, 32 years of age, who had already been shown by him at the January, 1906, meeting of the Society. His family history was good. The patient had been referred to him on October 17, 1905, by Dr. Arpad G. Gerster as an inoperable case of recurrent, small round-celled sarcoma. The following history was obtained.

About the middle of August, 1905, the patient noticed a swelling on the left side of the neck, just behind the sternomastoid muscle. At about the same time he also noticed an

enlargement of his left tonsil; there was no pain at first, but as both tumors increased rapidly in size, they soon became painful. In the latter part of August, 1905, the patient was operated upon at St. Mark's Hospital by Dr. Carl Beck, who made an attempt to remove the tonsil tumor, as well as that of the neck. He found it impossible, however, to make a complete excision. The patient was immediately put upon the X-ray treatment every other day, and also received radium treatment externally and internally; the latter, however, had little if any influence in checking the rapid growth of the tumor. On October 13, while under the care of Dr. Goldwater, at the New York Polyclinic, a portion of the tonsil tumor was removed and examined by Dr. F. M. Jeffries, Director of the Pathological Laboratory of the New York Polyclinic, and also by the Pathologist of the Practitioners' Laboratory, both of whom reported the tumor to be a small round-celled sarcoma.

On October 17, when Dr. Coley first saw the patient, a physical examination showed the following condition: The left side of the neck was occupied by a globular tumor, about the size of half an orange; it extended from the angle of the jaw in front to the mastoid process behind, and downwards nearly to the clavicle. Its consistence was about the same as that ordinarily found in round-celled sarcoma; the skin was not adherent. Examination of the left tonsil showed that it was enlarged to two or three times its normal size. The patient's general health had been but little affected. He was admitted to the General Memorial Hospital on October 17, 1905, and immediately put upon the mixed toxins of erysipelas and prodigiosus, without any other treatment. Daily injections were given, alternating, one day into the tumor direct; the other, into the pectoral region. The highest dose given was seven minims; his temperature ranged between 99.5 and 103. In less than a week there was a decided decrease in the size of the tumor, and an increase in mobility. The diminution continued steadily, until, at the end of six weeks, both the cervical and tonsil tumor had apparently entirely disappeared. He left the hospital at the end of seven weeks, and although there were no visible remains of the tumor, the toxins had been kept up twice a week in the pectoral region as a prophylactic against further recurrence.

Dr. Coley said it was interesting to note in connection

with this case that the toxins, which were prepared by Dr. B. H. Buxton, of the Loomis Laboratory, were eight months old.

Dr. Howard Lilienthal asked Dr. Coley what proportion of cases of sarcoma treated by the mixed toxins were apparently cured. Also, whether he had noted that metastases might occur in spite of the use of the toxins. In this connection, Dr. Lilienthal said, he wished to report the probable final history of a patient whom he had shown on two occasions to the members of the Surgical Society. The patient was a young girl with a sarcoma of the scapula; this was removed, and she made an excellent recovery. There was, however, a slight local recurrence, which disappeared under the use of Coley's fluid. She then remained well for a period of almost two years. Recently she returned with a recurrence in the mastoid of the corresponding side. After that had been operated on by Dr. Charles A. Elsberg, and removed quite radically, there was a further recurrence in the lung, and the patient was now rapidly failing and in an apparently hopeless condition.

Dr. Lilienthal said that while the final result in this case had been extremely disappointing to him, there were enough cases on record in which the mixed toxins had produced a complete and apparently permanent cure to make it well worth while to make use of the remedy.

Dr. Coley, in reply to Dr. Lilienthal, said that speaking approximately, the mixed toxins had produced an apparent cure in from ten to fifteen per cent. of the cases that he had treated personally. When it is remembered that these were all inoperable, hopeless cases, the results are encouraging. The speaker said that formerly he had limited the use of the toxins to inoperable cases, but now he was becoming more strongly in favor of employing the remedy, as Dr. Lilienthal has suggested, as a prophylactic measure. He recalled one case, where, seven years ago, he had removed a small periosteal tumor of the finger, which was regarded as benign. Sections of the growth were submitted to Dr. Welch, of Baltimore, and two pathologists in this city, and all three pronounced it a small round-celled periosteal sarcoma. The advisability of amputating the finger then came up, but as the patient strongly objected to such a radical measure, the toxins were used as a prophylactic. This was seven years ago, and thus far there had been no signs of a recurrence.

Dr. Coley said he could recall about 20 cases in which toxins had been used as a prophylactic measure. A very large number of these patients were still well. He knew of others where they apparently had no effect on the progress of the disease. The only thing to do was to test them. He said he was confident that they did not cause metastases, and the case which he showed at a last meeting of the Society, a sarcoma of the femur, periosteal round-celled, with an enormous metastatic growth on the back and one in the pectoral region disappeared under the use of the toxins. And the patient was well four years proved that the toxin may be successfully used, even with extensive metastases. The action of the toxins is systemic, not local.

SARCOMA OF THE INGUINAL GLANDS, SIMULATING HODGKIN'S DISEASE.

DR. COLEY presented a man, 37 years of age, who was admitted to the General Memorial Hospital on August 24, 1906, having been referred by Dr. A. G. Gerster as a case of inoperable sarcoma. Family history negative. The patient stated that he had always been in good health. Three years ago, he first noticed a small swelling in the right groin. This grew slowly until it reached the size of a walnut; was never painful and general health remained perfect. Five months prior to his admission the lumps in the groin began to increase in number and to grow rapidly in size. They finally interfered with his walking.

Physical examination at the time of his entrance to the hospital showed heart and lungs normal. His right inguinal region is occupied by a number of independent tumors, more or less closely fused and extending deeply into the iliac fossa. The skin over the growths was freely movable. The right thigh and leg were considerably swollen. Inasmuch as the tumor mass seemed so unusually movable, it seemed wise to attempt removal. This was done by Dr. Downes on Sept. 4, 1906. An incision, 9 ins. long, was made from the anterior superior spine, passing over the middle of Poupart's ligament and down along the course of the femoral vessels and a very large number of nodules, varying in size from a marble to a lemon, all more or less completely surrounded by a capsule, were removed. The peritoneum was opened accidentally in one place and closed with catgut sutures. The wound healed

satisfactorily, without suppuration. Microscopical examination of the growth, made by Dr. Clark, assistant pathologist of the hospital, and confirmed by Dr. Wood of the College of Physicians and Surgeons' laboratory pronounced it Hodgkin's disease. Portions of the tumor were also examined at Cornell laboratory and the same diagnosis was made.

Blood examination on May 7 showed: Red cells,4,200,000; white cells, 51,000; polymorphous 35 per cent.; lymphocytes 65 per cent.; hæmoglobin 80 per cent.

After the wound had healed, the nucleo-proteid serum from a case of Hodgkin's disease, prepared by Dr. S. P. Beebe from the Huntington Laboratory Fund for Cancer Research, was begun. Nine tubes of 15 cc. each were given without apparent effect. Oct. 16 the serum was given up and the patient was put upon the mixed toxins of erysipelas and bacillus prodigiosus. Up to the present time 19 injections have been given in doses of ½ mm. to 13 mm. at the present. On October 16 the right thigh measured 18¼ inches, being two inches larger than the left. Physical examination at that time showed the right inguinal and iliac regions occupied by a tumor which apparently infiltrated the adjacent structures, as its limits could not be well defined. In the right hypochondriac region, just to the right of the median line, there was a hard mass evidently attached to the spine and extending from the median line nearly over to the lumbar region and up almost to a level with the right costal arch. No enlargement of the spleen and liver could be detected. During the past month, under the toxin treatment, there has been some improvement in the abdominal condition; the tumor in the iliac fossa is somewhat smaller and the mass in the right hypochondrium is not nearly so pronounced. Measurements of the leg remain the same.

The principal reason for showing this case, he said, is that it emphasizes very clearly the striking similarity between Hodgkin's disease and sarcoma.

This case, together with a number of others, somewhat similar, which had come under his observation, had strengthened the opinion he had long held, that Hodgkin's disease is really a variety of sarcoma, rather than an independent disease.

Dr. George E. Brewer said he had now under treatment a case almost identical with the one shown by Dr. Coley. The

patient had a large glandular tumor in the groin, sections of which had been removed and pronounced Hodgkin's disease. The accessory glands in other parts of the body were also enlarged. In a similar case observed last spring, the serum treatment was very satisfactory.

DR. ANDREW J. MCCOSH said he was inclined to agree with Dr. Coley that Hodgkin's disease resembled sarcoma far more than it did tuberculosis. He had recently operated for the third time on a middle-aged man who had enlarged glands in the neck and other parts of the body. The first operation was done about four years ago, at which time he removed a large number of glands which the pathologist declared to be lymphosarcoma. Eighteen months ago a second operation was done. A number of glands were again removed, and these were pronounced probably lymphosarcoma. Three weeks ago the third operation was done, and the same pathologist reported that the case was one of Hodgkin's disease, making no mention of lymphosarcoma.

The pathologist's reports in this case, Dr. McCosh said, went to show that either there must be considerable difficulty in distinguishing between the two conditions, or else that the tissues had undergone some change since the date of the previous examinations.

DR. BLAKE reported the case of a woman who had a number of enlarged glands in the neck and axillæ. Those in the neck were removed, and the pathologist pronounced the case one of Hodgkin's disease. Subsequently, some of the axillary glands were removed and were reported tubercular. Later on there was an enlargement over the ribs, and the development of a tubercular sinus connected with the thoracic cavity. Dr. Blake said that when he last saw the patient, she was dying, apparently of Hodgkin's disease.

RESECTION OF THE SHOULDER AND ELBOW FOR TUBERCULOSIS.

DR. WILLY MEYER presented a Swedish woman, 32 years old, who had been operated on at Stockholm a number of times for tuberculosis of the right shoulder and right elbow, from which she had suffered since her thirteenth year.

When Dr. Meyer first saw the patient, in October, 1897,

both of the affected joints showed a typical tuberculous inflammation. He first resected the shoulder, (October) and subsequently the elbow, according to the Kocher method (December). The functional result of both operations was excellent. The woman, whose occupation was that of a waitress, had a strong right arm which she could use for all purposes, excepting that she was unable to raise it fully, and that pronation and supination were also slightly impaired. The operations were done nine years ago.

Dr. Meyer said he considered the Kocher method of resection far superior to that of Langenbeck. The former gave an excellent exposure of the parts, and all the important attachments of the tendons were preserved.

END-TO-END ARTERIOVENOUS ANGEIORRAPHY.

Dr. Howard Lilienthal read a paper with the above title, for which see page 1.

Dr. Blake said that from a theoretical standpoint certain objections to the procedure described by Dr. Lilienthal had occurred to him. In the first place, the ligation of the femoral vein was dangerous even when the vessels were normal. Again, it seemed to him that when the femoral artery was attached to the vein, the blood would take the shortest course back by the anastomotic branches with the superficial abdominal veins and through the veins around the hip joint, and not circulate through the terminal veins of the extremity. Another objection would be a production of a pressure stasis throughout the veins of the limb.

Dr. John B. Walker said that during the meeting of the American Medical Association in Boston last June, a case was shown at the Boston City Hospital in which the femoral artery and vein had been divided, the upper end of the femoral artery had been sutured to the lower end of the femoral vein, the lower end of the femoral artery had been sutured to the upper end of the femoral vein. Primary union had occurred. The patient suffered from gangrene of the foot.

Dr. Willy Meyer said the case referred to by Dr. Walker was probably that of Dr. Joshua C. Hubbard, of Boston, which was operated on in April, 1906, and described in the October, 1906, issue of the Annals of Surgery. In Dr. Hubbard's case

the patient, who was eighty years old, recovered from the operation, the femoral artery being cut and anastomosed to the vein and the vein divided and sutured to the artery. The procedure failed to check the gangrene. When the leg was amputated, about six weeks later, both the anterior and posterior tibials spurted arterial blood. The veins did not seem to carry arterial blood. The patient left the hospital in good condition.

Dr. Meyer also thought that such operations should be tested in the human subject in suitable cases, but he fears, that gangrene once having set in, can not be checked in this way.

DR. JOHN A. HARTWELL asked Dr Lilienthal whether Dr. Carrel, in his experimental work, had occluded the femoral artery by multiple ligatures, so as to prevent a return of the circulation through that vessel.

DR. LILIENTHAL, in closing the discussion, said he had considered this matter very carefully before he decided to risk the operation in the human subject. In reply to the theoretical objections raised by Dr. Blake, the speaker said that Dr. Carrel had succeeded in producing a complete reversal of the circulation, so that the veins carried arterial blood outwards, and the arteries carried venous blood back again. The blood, in its return course, did not necessarily take the shortest channel back to the heart; at least, that fact had been demonstrated in the normal animal. Whether it was so under pathological conditions, such as he had had to deal with, Dr. Lilienthal said he did not know. In a similar case in the future, if he found the popliteal artery occluded, he did not think he would again venture to operate higher up. Of the conditions he had mentioned in his paper in which the operation was perhaps justifiable, that of angeiosclerotic gangrene was the most hopeless. If there was a mortality attached to the operation, then, of course, it had no place, and amputation was preferable.

In reply to Dr. Hartwell, Dr. Lilienthal said that Carrel's work had been experimental, and limited to normal animals, and he was quite certain that he had not made any experiments that compared in a fair way with the pathological conditions that were encountered in this case.